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4.3 NOISE

The proposed Project will be a nominal 100 MW intermediate/peaking load facility operating up to 3,800 hours per year using natural gas-fired reciprocating engine technology. The Project includes the power plant site, the 230kV gen tie, 230kV utility switchyard, and the 8-inch natural gas pipeline lateral. This section presents an assessment of potential noise effects related to construction and operation of the proposed Project. A screening-level acoustic assessment was completed to determine the potential for adverse noise impacts associated with the construction and operation, in accordance with acceptable noise levels in applicable LORS, as presented in Section 4.3.5. The proposed Project is located west of the City of Santee, south of the Sycamore Landfill and north of SR 52 in the City of San Diego, California (see Figure 4.3-1). Due to the location of the plant site, the majority of noise sensitive areas are located in the City of Santee, and therefore, regulations from both the City of Santee and the City of San Diego have been considered. The CEC requirements, which define a significant increase criterion of 5 A-weighted decibels (dBA) over existing conditions, were also considered in establishing the acoustic design criteria.

The overall study objectives were to: (1) identify Project sound sources and estimate sound propagation characteristics, (2) computer simulate sound levels using internationally accepted calculation standards, and (3) determine the feasibility of the Project to operate in compliance with LORS. Section 4.3.1 discusses acoustic terminology and metrics used in the analysis. Section 4.3.2 describes the affected environment, including baseline sound survey methodology and results. Section 4.3.3 discusses the environmental consequences from construction and operation of the Project including cumulative impacts. Section 4.3.4 identifies candidate noise mitigation measures.

4.3.1 Acoustic Terminology and Metrics

Airborne sound is described as the rapid fluctuation or oscillation of air pressure above and below atmospheric pressure, creating a sound wave. Sound is characterized by properties of the sound waves, which are frequency, wavelength, period, amplitude, and velocity. Noise is further defined as unwanted sound and is measured in the same way. A sound source is defined by a sound power level (L_W), which is independent of any external factors. The acoustic sound power is the rate at which acoustical energy is radiated outward and is expressed in units of watts (W). Sound energy travels in the form of a wave, a rapid fluctuation or oscillation of air pressure above and below atmospheric pressure. A sound pressure level (L_P) is a measure of this fluctuation and can be directly determined with a microphone or calculated from information about the source sound power level and the surrounding environment through predictive acoustic modeling. While the sound power of a source is strictly a function of the total amount of acoustic energy being radiated by the source, the sound pressure levels produced by a source are a function of the distance from the source and the effective radiating area or physical size of the source. In general, the magnitude of a source’s sound power level is always considerably higher than the observed sound pressure level near a source due to the fact that the acoustic energy is being radiated in various directions from the source.

Sound levels are presented on a logarithmic scale to account for the large pressure response range of the human ear, and are expressed in units of decibels (dB). A decibel is defined as the ratio between a measured value and a reference value usually corresponding to the lower threshold of human hearing. defined as 20 micropascals (μPa). Conversely, sound power is commonly referenced to 1 picowatt (pW), which is one trillionth of a watt. Broadband sound includes sound energy summed across the frequency spectrum. In addition to broadband sound pressure levels, analysis of the various frequency components of the sound spectrum is completed to determine tonal characteristics. The unit of frequency is Hertz (Hz), which corresponds to the rate in cycles per second that sound pressure waves are generated., Typically, a sound frequency analysis examines 11 octave (or 33 1/3 octave) bands ranging from 16 Hz (low) to 16,000 Hz (high). This range encompasses the entire human audible frequency range. Since the human ear does not perceive every frequency with equal loudness, spectrally varying sounds are often adjusted with a weighting filter. The A-weighted filter is applied to compensate for the frequency response of the human auditory system. Sound exposure in acoustic assessments are commonly measured and calculated as A-weighted decibels (dBA). Unweighted sound levels are referred to as linear. Linear decibels are used to determine a sound's tonality and to engineer solutions to reduce or control noise as techniques are different for low and high frequency noise. Sound levels that are linear are presented as dBL.

An inherent property of the logarithmic decibel scale is that the sound pressure levels of two separate sources are not directly additive. For example, if a sound of 50 dBA is added to another sound of 50 dBA, the result is a 3-decibel increase (or 53 dBA), not an arithmetic doubling to 100 dBA. With respect to how the human ear perceives changes in sound pressure level relative to changes in "loudness", scientific research demonstrates that the following general relationships hold between sound level and human perception for two sound levels with the same or very similar frequency characteristics:

- 1 dBA is the practical limit of accuracy for sound measurement systems and corresponds to an approximate 10 percent variation in the sound pressure level. A 1 dBA increase or decrease is a non-perceptible change in sound.
- 3 dBA increase or decrease is a doubling (or halving) of acoustic pressure level and it corresponds to the threshold of change in loudness perceptible in a laboratory environment. In practice, the average person is not able to distinguish a 3 dBA difference in environmental sound outdoors.
- 5 dBA increase or decrease is described as a perceptible change in sound level and is a discernable change in an outdoor environment.
- 10 dBA increase or decrease is a tenfold increase or decrease in acoustic pressure level but is perceived as a doubling or halving in loudness (i.e., the average person will judge a 10 dBA change in sound level to be twice or half as loud).

Sound levels can be measured, modeled and presented in various formats. The sound metrics that were employed in the following noise assessment have the following definitions:

- **L_{eq}:** Conventionally expressed in dBA, the L_{eq} is the energy-averaged, A-weighted sound level for the complete time period. It is defined as the steady, continuous sound level over a specified time, which has the same acoustic pressure level as the actual varying sound levels over the specified period.
- **L_{max}**: The maximum A-weighted sound level as determined during a specified measurement period. It can also be described as the maximum instantaneous sound pressure level generated by a piece of equipment.

- **L_n**: This descriptor identifies the sound level that is exceeded "n" percent of the time over a measurement period (e.g., L_{90} = sound level exceeded 90 percent of the time). The sound level exceeded for a small percent of the time, L_{10}, closely corresponds to short-term, higher-level, intrusive noises (such as vehicle pass-by noise near a roadway). The sound level exceeded for a large percent of the time, L_{90}, closely corresponds to continuous, lower-level background noise (such as continuous noise from a distant industrial facility). L_{50} is the level exceed 50 percent of the time and is typically referred to the median sound level over a given period.
- **L_{dn}**: The L_{dn} measures the 24-hour average noise level at a given location. It was adopted by the U.S. Environmental Protection Agency (USEPA) for developing criteria for the evaluation of community noise exposure. The L_{dn} is calculated by averaging the 24-hour hourly L_{eq} levels at a given location after adding 10 dB to the nighttime period (10:00 p.m. - 7:00 a.m.) to account for the increased sensitivity of people to noises that occur at night.
- **CNEL**: Community Noise Equivalent Level (CNEL) is another average A-weighted L_{eq} sound level measured over a 24-hour period; however, this noise scale is adjusted to account for some individuals' increased sensitivity to noise levels during the evening and nighttime hours. A CNEL noise measurement is obtained after adding 5 dB to sound levels occurring during evening hours (7:00 p.m. to 10:00 p.m.) and 10 dB to sound levels occurring during nighttime hours (10:00 p.m. to 7:00 a.m.).

Estimates of noise sources and outdoor acoustic environments, and the comparison of relative loudness are presented in Table 4.3-1. Table 4.3-2 provides additional reference information on acoustic terminology used throughout the acoustic assessment.

Table 4.3-1 Sound Pressure Levels (L_P) and Relative Loudness of Typical Noise Sources and Acoustic Environments

Noise Source or Activity	Sound Level (dBA)	Subjective Impression	Relative Loudness (perception of different sound levels)
Jet aircraft takeoff from carrier (50 ft)	140	Threshold of pain	64 times as loud
50-hp siren (100 ft)	130		32 times as loud
Loud rock concert near stage Jet takeoff (200 ft)	120	Uncomfortably loud	16 times as loud
Float plane takeoff (100 ft)	110		8 times as loud
Jet takeoff (2,000 ft)	100	Very loud	4 times as loud
Heavy truck or motorcycle (25 ft)	90		2 times as loud
Garbage disposal Food blender (2 ft) Pneumatic drill (50 ft)	80	Loud	Reference loudness
Vacuum cleaner (10 ft)	70		1/2 as loud
Passenger car at 65 mph (25 ft)	65	Moderate	
Large store air-conditioning unit (20 ft)	60		1/4 as loud
Light auto traffic (100 ft)	50	Quiet	1/8 as loud
Quiet rural residential area with no activity	45		
Bedroom or quiet living room Bird calls	40	Faint	1/16 as loud
Typical wilderness area	35		
Quiet library, soft whisper (15 ft)	30	Very quiet	1/32 as loud
Wilderness with no wind or animal activity	25	Extremely quiet	

Noise Source or Activity	Sound Level (dBA)	Subjective Impression	Relative Loudness (perception of different sound levels)
High-quality recording studio	20		1/64 as loud
Acoustic test chamber	10	Just audible	
	0	Threshold of hearing	

Adapted from: Kurze and Beranek (1988) and USEPA (1971)

Table 4.3-2 Acoustic Terms and Definitions

Term	Definition
Noise	Typically it is unwanted sound. This word adds the subjective response of humans to the physical phenomenon of sound. It is commonly used when negative effects on people are known to occur.
Sound Pressure Level (L_P)	Pressure fluctuations in a medium. Sound pressure is measured in decibels referenced to 20 microPascals, the approximate threshold of human perception to sound at 1,000 Hz.
Sound Power Level (L_W)	The total acoustic power of a noise source measured in decibels referenced to picowatts (one trillionth of a watt). Equipment specifications are provided by equipment manufacturers as sound power as it is independent of the environment in which it is located. A sound level meter does not directly measure sound power.
A-Weighted Decibel (dBA)	Environmental sound is typically composed of acoustic energy across all frequencies (Hz). To compensate for the auditory frequency response of the human ear, an A-weighting filter is commonly used for describing environmental sound levels. Sound levels that are A-weighted are presented as dBA in this report.
Unweighted Decibels (dBL)	Unweighted sound levels are referred to as linear. Linear decibels are used to determine a sound's tonality and to engineer solutions to reduce or control noise as techniques are different for low and high frequency noise. Sound levels that are linear are presented as dBL in this report.
Propagation and Attenuation	Propagation is the decrease in amplitude of an acoustic signal due to geometric spreading losses with increased distance from the source. Additional sound attenuation factors include air absorption, terrain effects, sound interaction with the ground, diffraction of sound around objects and topographical features, foliage, and meteorological conditions including wind velocity, temperature, humidity, and atmospheric conditions.
Octave Bands	The audible range of humans spans from 20 to 20,000 Hz and is typically divided into center frequencies ranging from 31 to 8,000 Hz.
Broadband Noise	Noise which covers a wide range of frequencies within the audible spectrum, i.e. 200 to 2000 Hz.
Frequency (Hz)	The rate of oscillation of a sound, measured in units of Hz or kilohertz (kHz). One hundred Hz is a rate of one hundred times (or cycles) per second. The frequency of a sound is the property perceived as pitch: a low-frequency sound (such as a bass note) oscillates at a relatively slow rate, and a high-frequency sound (such as a treble note) oscillates at a relatively high rate. For comparative purposes, the lowest note on a full range piano is approximately 32 Hz and middle C is 261 Hz.

4.3.2 Affected Environment

4.3.2.1 Local Land Use and Noise Sources

Currently, the region immediately surrounding the power plant site is undeveloped land and the majority of noise sensitive areas are located to the east in the City of Santee. There is significant terrain shielding that will help block sound propagating to the residential areas. Traffic noise is the most consistent source of noise affecting the immediate surrounding areas including truck traffic generated by the Sycamore Landfill (the Project is located on Sycamore Landfill Road) and SR 52.

The zoning of the Project site and surrounding properties is an important consideration, since the LORS for the City of San Diego and City of Santee are a function of the local zoning. This is particularly important for the City of San Diego, where the Project site is located. The Project site and surrounding parcels are currently zoned residential as specified in the San Diego zoning regulations. However, the surrounding San Diego parcels are undeveloped and the closest existing residential area in relation to the Project site is located in the City of Santee. Therefore, for the purposes of this noise assessment, it has been assumed that the San Diego Noise Ordinance numerical noise limits that apply in residential zones will not be applied to the undeveloped San Diego parcels.

The Project will connect to the SDG&E 230kV electric transmission system at the proposed utility switchyard, approximately 1 mile northwest of the plant site. The proposed 230kV gen tie route runs north along the west side of Sycamore Landfill Road for approximately 2,600 feet then northwest for approximately 2,600 feet to the utility switchyard. The utility switchyard and the entire run of 230kV gen tie will be located on property owned by the Sycamore Landfill. The plant will connect to the existing 20-inch diameter SDG&E natural gas pipeline that is located 2,200 feet away from the proposed plant site at the intersection of Mast Boulevard and Sycamore Landfill Road. From the tie-in point, the Project's natural gas pipeline lateral will generally follow Sycamore Landfill Road to the proposed plant site.

4.3.2.2 Baseline Sound Survey

An ambient sound survey was conducted over a 2-day period from July 20 to July 21, 2011 to characterize the existing acoustic environment in the vicinity of the plant site. The measurement locations were selected to be representative of residential receptors nearest to the plant site as well as other nearby potentially noise sensitive receptors such as schools and designated park lands. The ambient sound survey included both automated unattended long-term (LT; 25-hour) and short-term with an engineer present (ST; durations up to 1 hour) measurements. Figure 4.3-1 presents the locations where sound measurements were conducted, which are further described as follows:

- ST-1: This monitoring location is situated near 8555 Rumson Drive, Santee. It is representative of a residential neighborhood immediately south of the West Hills High School, where long-term monitoring was performed. Daytime measurements were taken from approximately 11:00 a.m. to 11:30 a.m. on July 20 and nighttime measurements were taken from approximately 10:00 p.m. to 10:30 p.m. that same day.
- ST-2: This monitoring location is located at the western end of Rumson Drive in a cul-de-sac. The closest residence is 8301 Rumson Drive, Santee. This monitoring location represents the closest residential area to the plant site. Daytime measurements were taken from approximately 11:40 a.m. to 12:10 p.m. on July 20 and nighttime measurements were taken from approximately 10:45 p.m. to 11:15 p.m. that same day.
- ST-3: Measurements were conducted at the corner of Medina Drive and Greenbrook Way, Santee, California. This monitoring location is located east of the plant site and represents residences in this area. It was monitored from approximately 1:00 p.m. to 1:30 p.m. and 11:30 p.m. to 12:00 a.m. on July 20.

- ST-4: This location is near 9527 Medina Drive, Santee and is in proximity to the intersection with Mast Boulevard. Similar to ST-3, this location represents residences east of the plant site. This location was monitored from approximately 1:40 p.m. to 2:10 p.m. on July 20 and 12:10 a.m. to 12:40 a.m. on July 21.
- ST-5: This monitoring location is in the Mission Trails Regional Park. This recreational area is located immediately southwest of the Project and the San Clemente Canyon Freeway, which runs in between the plant site and the park. Measurements were limited to daytime hours, which is the period when park visitors would likely be present. Daytime measurements were conducted from approximately 3:30 p.m. to 4:00 p.m. on July 20.
- LT-1: This location is the West Hills High School in Santee, which is located southeast of the proposed facility and would be considered the closest noise sensitive receptor (other than the Mission Trails Regional Park). Continuous long-term measurements were taken from approximately 10:30 a.m. on July 20 through 12:00 p.m. on July 21.

Atmospheric conditions during the survey period were conducive for the collection of accurate sound measurements. Ambient temperatures ranged from 66°F to 89°F and the average relative humidity was approximately 50 percent. There was a very slight intermittent breeze but the overall conditions were calm. There was no precipitation during the monitoring periods. Existing noise sources contributing to the ambient acoustic environment were documented during the short-term sound measurements. Main contributors to ambient levels consisted of motor vehicle traffic on local roadways and regular overhead noise from both airplane and helicopter flyovers. Natural sounds such as birds, insects, and periodic leaf or vegetation rustle also contributed to the ambient soundscape.

Measurements were taken with a Larson Davis 831 real-time sound level analyzer equipped with a PCB model 377B02 1/2" precision condenser microphone. This instrument has an operating range of 5 dB to 140 dB, and an overall frequency range of 8 to 20,000 Hz, and meets or exceeds all requirements set forth in the American National Standards Institute (ANSI) standards for Type 1 sound level meters for quality and accuracy (precision). All instrumentation was laboratory calibrated within the previous 12-month period with calibration documentation provided in Appendix D. In all cases, the microphone and windscreen were tripod-mounted at an approximate height of 1.5 to 1.7 meters (4.9 to 5.6 feet) above grade away from effects of ground level noise and reflective surfaces. In addition, the sound level analyzer microphones were protected from wind-induced self-noise effects by a 180-millimeter (mm) (7 inch) diameter foam windscreen made of specially prepared open-pored polyurethane.

At each of the monitoring locations, a sound level meter was tripod mounted at a height of 1.52 meters, field calibrated, and programmed to log data continuously. Calibration was achieved with two ANSI Type 1 calibrators which have accuracy traceable to the National Institute of Standards and Technology (NIST). Each sound analyzer was programmed to measure and log broadband A-weighted sound pressure levels in 10- and 1-minute time intervals, including a number of statistical parameters such as the average L_{eq} maximum L_{max}, and statistical sound levels (L_{10}, L_{50}, L_{90}). Data were collected for 1/1 and 1/3 octave bands spanning the frequency range of 8 Hz to 20 kHz. Following the completion of the measurement period, all measured data were downloaded to a computer for the purposes of storage and further analysis. Table 4.3-3 summarizes the results of the short-term measurements. Figure 4.3-2 shows a time history plot of the measured background (L_{eq}), and other statistical sound levels at monitoring position LT-1 completed at the West Hills High School are shown in Figure 4.3-4.

Table 4.3-3 Short-Term Measured Sound Level Summary

Receptor	Daytime Period				Nighttime Period			
	L_{eq}	L_{10}	L_{50}	L_{90}	L_{eq}	L_{10}	L_{50}	L_{90}
ST-1	54	56	50	48	53	56	49	44
ST-2	55	57	54	52	47	49	47	45
ST-3	46	49	41	38	44	45	43	42
ST-4	55	58	51	46	36	39	35	34
ST-5	53	54	52	51	N/A	N/A	N/A	N/A

Table 4.3-4 Hourly Noise Levels at LT-1, West Hills High School

Date	Start Time (PST)	DNL Time Period	L_{eq} [dB]	L_{10} [dB]	L_{90} [dB]
7/20/11	11:00 a.m.	Day	51	54	48
7/20/11	12:00 p.m.	Day	50	52	47
7/20/11	1:00 p.m.	Day	50	52	48
7/20/11	2:00 p.m.	Day	50	51	48
7/20/11	3:00 p.m.	Day	51	52	49
7/20/11	4:00 p.m.	Day	51	52	48
7/20/11	5:00 p.m.	Day	50	52	47
7/20/11	6:00 p.m.	Day	50	52	47
7/20/11	7:00 p.m.	Evening	50	51	47
7/20/11	8:00 p.m.	Evening	48	50	46
7/20/11	9:00 p.m.	Evening	49	51	46
7/20/11	10:00 p.m.	Night	46	48	43
7/20/11	11:00 p.m.	Night	45	47	42
7/21/11	12:00 a.m.	Night	40	42	37
7/21/11	1:00 a.m.	Night	33	36	30
7/21/11	2:00 a.m.	Night	32	34	29
7/21/11	3:00 a.m.	Night	32	34	29
7/21/11	4:00 a.m.	Night	35	37	32
7/21/11	5:00 a.m.	Night	41	42	38
7/21/11	6:00 a.m.	Night	45	47	44
7/21/11	7:00 a.m.	Day	52	54	47
7/21/11	8:00 a.m.	Day	56	59	50
7/21/11	9:00 a.m.	Day	47	49	44
7/21/11	10:00 a.m.	Day	49	51	45
7/21/11	11:00 a.m.	Day	48	50	46

4.3.3 Environmental Consequences

4.3.3.1 Significance Criteria

Following the CEQA guidelines (CCR, Title 14, Appendix G, Section XI), the Project would cause a significant impact if it would result in the following:

- Exposure of people to noise levels in excess of standards established in the local General Plan or noise ordinance;
- Exposure of people to excessive ground-borne noise levels or vibration;
- Substantial permanent increase in ambient noise levels in the project vicinity; or
- Substantial temporary or periodic increase in ambient noise levels in the project vicinity.

As a basis for the acoustic assessment within the scope of land-use and planning, the minimum, or most stringent, noise levels required by any of the applicable LORS have been identified. The LORS are addressed in detail in Section 4.3.5. A summary of the controlling LORS for both construction and operation are provided here for purposes of the impact results presentation and evaluation of the environmental consequences of the Project.

With respect to construction, the City of San Diego Municipal Code (59.5.0404) prohibits construction activities that cause excessive or disturbing noise between the hours of 7:00 p.m. and 7:00 a.m. unless a permit has been applied for and granted beforehand by the San Diego Noise Abatement and Control Administrator. In addition, San Diego does not allow a construction activity to cause an average sound level greater than 75 dBA during the hours of 7:00 a.m. to 7:00 p.m. at or beyond the property lines of any property zoned residential. As noted in Section 4.3.2.1, this numerical limit of 75 dBA on adjacent residentially zoned parcels is assumed not to apply to the undeveloped parcels in the City of San Diego that are in the vicinity of the Project site.

The City of Santee specifically restricts construction activity to between the hours of 7:00 a.m. to 7:00 p.m., Monday through Saturday. For the City of Santee, construction noise is also prohibited from resulting in more than 75 dBA of noise in any residential area for more than 8 hours in any 24-hr period, with higher limits allowed for shorter time durations.

California Energy Commission (CEC) staff has stated that construction noise is typically insignificant if (1) the construction activity is temporary, (2) use of heavy equipment and noisy activities are limited to daytime hours, and (3) all feasible noise abatement measures are implemented for noise-producing equipment (CEC, 2002).

With respect to operational noise, both the City of San Diego and the City of Santee have a one-hour average noise limit in residentially zoned areas of 40 dBA from 10:00 p.m. to 7:00 a.m. Since the Project will have the potential of operating any time of the day, the 10: 00 p.m. to 7:00 a.m. noise limit is the most restrictive and controlling limit. However, as noted in Section 4.3.2.1 above, the San Diego numerical limit of 40 dB on adjacent residentially zoned parcels is assumed not to apply to the undeveloped parcels in the City of San Diego that are in the vicinity of the plant site.

For operational noise, CEC staff has stated that increases in noise less than 5 dBA above background at a sensitive receptor are clearly not significant, and increases in noise greater than 10 dBA above background at a sensitive receptor are clearly significant. Increases in background noise between 5 and 10 dBA may be significant, depending on the circumstances (CEC, 2002). Whether these CEC recommended increases in noise or the City limits of 40 dBA are more restrictive depends on the background noise level at a given receptor.

4.3.3.2 Construction Noise Impacts

Construction of the Project is expected to be typical of other power generating facilities in terms of schedule, equipment used and other types of activities. In addition to the power plant, the Project will also require construction of the gas pipeline lateral, the 230kV gen tie, and the 230kV utility switchyard. Construction of the generation plant, from mobilization through site preparation and grading, to commercial operation, is expected to take place from March 2013 until June 2014.

Plant Facility Construction

Construction of power plants can usually be divided into five phases that feature different types of construction equipment. The five phases are (1) demolition, site preparation, and excavation; (2) concrete pouring; (3) steel erection; (4) mechanical; and (5) cleanup. The sound levels resulting from construction activities vary significantly depending on such factors such as the type and age of equipment, the specific equipment manufacturer and model, the activities being completed, and the overall condition of the equipment and exhaust system mufflers.

Noise levels from facility construction were evaluated using a screening-level analysis approach. The calculation methodology requires the input of the number and type of construction equipment by phase as well as a typical noise source levels associated with that equipment to determine the composite sound levels for a standard distance of 50 feet and 1,000 feet. The variation in power and usage imposes additional complexity in characterizing construction noise levels. The analysis conservatively assumes all construction equipment in a given construction phase operates simultaneously at 100 percent load usage ratings; however, equipment is generally not assumed to operate continuously. Table 4.3-5 summarizes results for the five conceptual construction phases.

Table 4.3-5 Representative Maximum Construction Noise Levels by Construction Phase

Phase No.	Construction Phase	Example Construction Equipment	Equipment Noise Level at 15 m (50 ft), dBA	Composite Noise Level at 15 m (50 ft), dBA	Composite Leq Noise Level at 1,000 feet, dBA
1	Demolition, site preparation, and excavation	Dump Truck Backhoe Dozer Excavator Grader Compactor Roller	91 85 86 85 85 80 85	95	60
2	Concrete pouring	Cement Mixer Truck Slurry Truck Pump	80 80 83	86	51
3	Steel erection	Derrick Crane Jack Hammer Flatbed Truck Forklift Air Compressor	88 88 84 80 80	92	58

Phase No.	Construction Phase	Example Construction Equipment	Equipment Noise Level at 15 m (50 ft), dBA	Composite Noise Level at 15 m (50 ft), dBA	Composite Leq Noise Level at 1,000 feet, dBA
4	Mechanical	Derrick Crane Pneumatic Tools Air Compressor	88 86 80	91	56
5	Cleanup	Rock Drill Truck	98 91	99	64

Notes:
Data compiled in part from the following sources: Federal Highway Administration 2006; Bolt, Beranek and Newman, Inc. 1977; Federal Highway Administration 1992.

The noise levels in Table 4.3-5 at 50 feet are noise levels that would be experienced on the Project site itself during construction. As indicated by the composite L_{eq} noise levels at 1,000 feet, construction sound will be attenuated with increased distance from the source. Other factors, such as vegetation, terrain and obstacles such as buildings will act to further limit the impact of construction noise levels, but were conservatively not considered in computing these L_{eq} values. The 1000-foot L_{eq} values represent the magnitude of noise levels that are expected in the closest portion of the Mission Trails Regional Park to the actual Project site construction area. These 1000-foot L_{eq} levels are all well below City of Santee and City of San Diego 75 dBA construction noise limit and also below the USEPA guideline levels for safety/hearing loss concerns applicable at publicly accessible areas. Actual received sound levels will fluctuate, depending on the construction activity, equipment type, and separation distances between source and receiver. Construction noise may be periodically audible at several residential receptor locations. Construction activities generating noise will be limited to daytime hours (7: 00 a.m. to 7:00 p.m., weekdays only), unless a permit is granted beforehand by the San Diego Noise Abatement and Control Administrator to extend construction hours. With respect to the City of Santee's limits on the hours of construction, the Santee Noise Ordinance has a variance procedure. If an extension of construction hours beyond 7: 00 a.m. to 7:00 p.m. is sought, a determination will be made of the need to obtain a variance from the City of Santee.

Gas Pipeline Construction

Gas pipeline construction is also required for the Project's 8-inch natural gas pipeline to tie-in to the existing 20-inch diameter SDG&E natural gas pipeline. The gas pipeline will be installed underground using open trenching and backfill construction methods, except for the Mast Boulevard crossing. The trenching and backfill construction method will include hauling and stringing of pipe along the pipeline route in advance of the moving area of installation; trenching for pipe installation; welding; radiographic inspection and coating of pipe welds; lowering the pipe into the trench; pressure testing; and backfilling of the trench. At the Mast Boulevard crossing, the pipeline will be installed beneath the road using either the horizontal-directional-drilling (HDD) or jack-or-bore construction method. If HDD is required, the equipment used varies somewhat depending on the length and depth of each drill, and subsurface soil and bedrock conditions. For longer HDD crossings with deeper bedrock penetration, equipment would include a drill rig, hydraulic crane, mud pump, generators, a screening/filter system for drill cuttings, and mobile support equipment. The primary HDD equipment would be powered by diesel engines ranging from 150 to 600 hp. The majority of equipment would be located on the drill entry site whereas the equipment at the exit location would likely consist of an excavator, centrifugal pumps, and a mud pump and rig. The estimated unmitigated sound power level for HDD equipment operating at the entry and exit points ranges from approximately 110 to 121 dBA, depending on horsepower and equipment configuration. With mitigation measures such as temporary noise barriers, enhanced mufflers, or engine enclosures a 10 dBA reduction can be reasonably achieved in practice.

Provided in Table 4.3-6 is a listing of typical equipment sound levels from the construction equipment associated with each phase of underground pipeline construction at a standard distance of 50 feet and a distance of 1,000 feet. Specific sound level data corresponding to specialized HDD equipment is not included since it is not clear if this technique will be necessary.

Table 4.3-6 Noise Levels for Underground Gas Pipeline Construction by Phase

Phase No.	Construction Phase	Example Construction Equipment	Equipment Noise Level at 15 m (50 ft), dBA	Composite Noise Level at 15 m (50 ft), dBA	Composite L_{eq} Noise Level at 1,000 feet, dBA
1	Trenching	Trencher Backhoe Excavator	82 80 85	88	53
2	Pipe laying	Mobile Crane Welder Specialty Truck	85 73 78	86	51
3	Pressure testing	Compressor Pneumatic Tools Portable Generator	80 86 82	88	54
4	Backfilling	Backhoe Paver Roller	80 85 85	89	54

The noise levels in Table 4.3-6 at 50 feet are noise levels that would be experienced directly adjacent to the pipeline construction activities. As indicated by the composite L_{eq} noise levels at 1000 feet, construction sound will also be significantly attenuated with increased distance from the source. Similar to the plant facility construction analysis, other factors, such as vegetation, terrain and obstacles such as buildings will act to further limit the impact of construction noise levels, but were conservatively not considered in computing these L_{eq} values. The 1000-foot L_{eq} values represent pipeline worst case construction noise levels that would reasonably be expected in sectionsof the Mission Trails Regional Park and at the closest residential areas of Santee. These 1000-foot L_{eq} levels are all well below the USEPA guideline levels for safety/hearing loss concerns as well as below the City of Santee construction noise numerical limit of 75 dBA in residential areas. Pipeline construction will be limited to daytime hours (7:00 a.m. to 7:00 p.m., weekdays only).

Transmission Line and Utility Switchyard Construction

Other Project facilities include a 230kV gen tie and a 230kV switchyard, which will consist of a single three-winding GSUT and associated 230kV gas-insulated (SF6) circuit breaker, disconnect switches, and interconnecting bus structures. Construction of the gen tie to the proposed SDG&E switchyard will occur within the limits of Sycamore Landfill-owned property. Construction of the gen tie will take place partially overhead and partially underground. Overhead and underground transmission line construction will generate noise levels that are periodically audible. Noise would be generated along the Project route, access roads, structure sites, conductor pulling sites, and staging and maintenance areas. Overhead line construction is typically completed in the following stages, but various construction activities may overlap and with multiple construction crews operating simultaneously: (1) site access and preparation; (2) installation of structure foundations; (3) erecting of support structures; (4) stringing of conductors, shield wire and fiber optic ground wire; and (5) cleanup and site restoration.

Noise levels from overhead transmission line construction were evaluated using a screening level analysis approach. The calculation methodology requires the input of the number and type of construction equipment by phase as well as a typical noise source levels associated with that equipment to determine the composite sound levels for a standard distance of 50 feet and 1,000 feet. Table 4.3-7 summarizes results for the five conceptual construction phases focusing on equipment that typically have the highest sound power levels. Equipment and noise levels associated with underground transmission line construction will be similar to gas pipeline construction.

Table 4.3-7 Noise Levels for Overhead Transmission Line Construction by Phase

Phase No.	Construction Phase	Example Construction Equipment	Equipment Noise Level at 15 m (50 ft), dBA	Composite Noise Level at 15 m (50 ft), dBA	Composite L_{eq} Noise Level at 1,000 feet, dBA
1	Site Access and Preparation	Bulldozer Grader Roller – Compactor Dump Truck	86 82 75 80	88	54
2	Installation of Structure Foundations	Bulldozer Mobile Crane Auger Rig Drill Rig Jackhammer Cement Mixer Truck	86 82 85 87 90 80	94	59
3	Erecting of Support Structures	Forklift Mobile Crane Compressor Flatbed Truck	80 82 81 75	86	52
4	Stringing of Conductors, Shield Wire and Fiber Optic Ground Wire	Tracked Dozer Line Puller Mixed Trucks	86 81 80	88	53

For construction of the utility switchyard clearing of all vegetation and grading of approximately 2.5 acres will be required. Secure fencing and a grounding system must be in place prior to the foundation installation. The substation equipment such as the transformers and circuit breakers can then be mounted directly to the foundations. The control building is constructed and high voltage conductors are installed. Construction equipment and resulting received sound levels are expected to be similar or less than that produced during transmission line construction. Construction work on the substations will generally occur in the one or more of the following phases as needed depending on the extent of site work required: (1) site clearing; (2) site grading and compaction; (3) trenching and foundations; (4) equipment pads, and (5) equipment installation.

Equipment utilized for construction will differ from one phase to another. In general, heavy equipment (bulldozers, dump trucks, cement mixers) will be used during excavation and concrete pouring activities. Average site sound levels for each phase of construction, which accounts for the estimated time that equipment are in operation, are presented in Table 4.3-8 below.

Table 4.3-8 Noise Levels for Utility Switchyard Construction by Phase

Phase No.	Construction Phase	Example Construction Equipment	Equipment Noise Level at 15 m (50 ft), dBA	Composite Noise Level at 15 m (50 ft), dBA	Composite L_{eq} Noise Level at 1,000 feet, dBA
1	Site Clearing	Tracked Dozer Brush Cutter Wood Chipper	88 91 81	93	58
2	Site Grading and Compaction	Scraper Grader Roller-Compactor Backhoe-Loader Water Truck	85 82 75 80 80	88	54
3	Trenching and Foundations	Excavator Auger Rig Cement Mixer Truck	80 85 80	87	53
4	Equipment Pads	Mobile Crane Forklift Flatbed Truck Cement Mixer Truck	82 80 75 80	86	51
5	Equipment Installation	Compressor Mobile Crane Forklift Wheeled Loader	81 82 80 80	87	52

Noise associated with the construction of the gen tie and utility switchyard produce similar composite L_{eq} noise levels to those produced by other Project construction activities. Construction noise by its nature is temporary and with practical mitigation measures in place adverse noise impacts at sensitive receptors are expected to be low.

Construction Traffic

Traffic noise generated during construction onsite and offsite may also contribute to overall environmental sound levels at receiver locations along the transit routes. Construction materials and supplies such as equipment modules, concrete, structural steel, pipe, wire, cable, fuel, lubricant, paint, adhesives, tools, water, and consumables will be delivered by truck. An average of approximately 15 and a peak of approximately 30 deliveries will occur each weekday during the construction period to bring equipment, materials, and supplies to the site, including about four deliveries per day to gas pipeline staging areas. Deliveries will arrive via SR 52 and will be distributed throughout the work day. Traffic related to construction workers traveling to and from the site will also contribute to traffic sound levels. The California Vehicle Code, Sections 23130 and 23130.5, limits noise emissions for roadway vehicles that are bought, sold, and operate on California roadways. The limits are enforceable on the highways by the California Highway Patrol and the County Sheriff Offices.

4.3.3.3 Operational Noise Impacts

The facility will be designed to comply with the City of San Diego, City of Santee, and CEC LORS summarized in Section 4.3.5; specifically, a 1-hour average limit of 40 dBA at existing single family residential areas and the 5 dBA cumulative increase in ambient level.

Engine Hall and Gas Heater System

One 4 MMBtu/hr natural gas-fired heater will be used for heating of the engine cooling water system for 10-minute start capability. The preliminary design indicates the gas heater systems will be located within a single building to control noise. The building design is yet to be determined but has been conceptualized to be acoustically treated so as to minimize noise and all associated pipework is to be acoustically lagged. Airways into the building will need to be adequately sound attenuated and exhausts adequately sound attenuated through the use of silencers.

The 11 engines will be housed in an engine hall structure, both for their general environmental protection and for abatement of engine noise. Transmission of vibration and structure borne noise will be minimized by having the engines flexibly mounted on their concrete foundations and connected to piping and exhaust systems through flexible bellows. As a result, each engine will be isolated from the building, piping, and steel structures. The engine hall will employ similar acoustic treatments as the gas heater with building components normally consisting of steel construction: a steel skin, mineral wall in the walls, and perforated metal interior walls for sound absorption. The amount of noise radiated from the wall surfaces and ventilation system of any given building is readily controllable over a reasonably wide range, and further consideration will be done in the final engineering design. For the sites requiring high levels of sound mitigation, a double or sandwich wall design may be required. All ventilation openings and rooftop fans will need to be acoustically silenced and attenuated to maintain the acoustical integrity of the design. Machinery and personnel access into the building will be through purpose-designed high performance acoustic doors.

Radiator

Radiators (or air coolers) serve to cool engine coolant (similar to a car radiator) and the air is circulated through the cooling grid. The sound power of the air cooler is principally caused by the axial fan, the reducing gear, and the drive motors. As a rule, air coolers emit uniform noise. Each radiator bank is composed of seven fan/coil units and there are two banks per engine generator set. Under the attenuated design, the radiator represents one of the dominant onsite sound sources.

Transmission Line and Switchyards

The on-site 230kV facility switchyard and the offsite utility switchyard include switchgear and voltage step-up transformers. The switchyard uses equipment that converts electricity from the voltages needed for generation to those needed for efficient and effective transmission. This equipment includes transformers and protection devices. Transformers generate the sound generally described as a low humming. There are three main sound sources associated with a transformer: core noise, load noise, and noise generated by the operation of the cooling equipment. The core vibrational noise is the principal noise source and does not vary significantly with electrical load. Transformers are designed and catalogued by megavolt ampere (MVA) ratings. Just as horsepower ratings designate the power capacity of an electric motor, a transformer's MVA rating indicates its maximum power output capacity. The National Electrical Manufacturers Association (NEMA) published NEMA Standards TR1-1993 (R2000), which establish the maximum noise level allowed for transformers, voltage regulators, and shunt reactors based on the equipment's method of cooling its dielectric fluid (air-cooled vs. oil-cooled) and the electric power rating. It is reasonable to expect that transformers used will comply with NEMA requirements. Circuit-breaker operations may also cause audible noise, particularly the operation of air-blast breakers which is characterized as a impulsive sound event of very short duration, and is expected to occur only a few times throughout the year. It was therefore not considered in this analysis.

Corona is a function of the voltage of the line, the diameter of the conductor, and the condition of the conductor and suspension hardware. Section 2.5.8.5, Audible Noise, provides more detailed information on corona. The electric field gradient is the rate at which the electric field changes and is directly related to the line voltage. The electric field gradient is greatest at the surface of the conductor. Large-diameter conductors have lower electric field gradients at the conductor surface and, hence, lower corona than smaller conductors, everything else being equal. Irregularities, such as knicks and scrapes on the conductor surface, or sharp edges on suspension hardware, concentrate the electric field at these locations and increase corona at these spots. Similarly, contamination on the conductor surface, such as dust or insects, can cause irregularities that are a source for corona. Raindrops, fog, and condensation are also sources of irregularities. Corona typically becomes a design concern for transmission lines having voltages of 345kV and above.

Given the extended separation distances and terrain shielding, operation of the electrical transmission line and switchyard are not expected to result in an adverse noise impact.

Stack Wall and Exits

The stack tops are at 100 feet elevation and stack diameters are 4 feet. Sound transmission through the stack walls assumed a face density of 35 pounds per square foot. The equivalent thickness of a single piece of steel is 0.8 inches. Stack sound power was estimated at 130 dBA based on data provided by the equipment manufacturer. The attenuation provided by the SCR system and an inline silencer specified for this application was estimated to reduce the sound power to 95 dBA.

Other Noise Sources

Acoustical enclosures will be used around all circulating water, process, raw, and wastewater pumps or housed in sound attenuated buildings, as necessary, to meet acoustic design goals.

Acoustic Modeling

Operational sound associated with the Project was evaluated employing a computer simulation. DataKustic GmbH's CadnaA, the computer-aided noise abatement program (v 4.1.137) was used for the acoustic modeling analysis. CadnaA conforms to International Standard DIN ISO-9613.2, "Acoustics – Attenuation of Sound during Propagation Outdoors." The method evaluates A-weighted sound pressure levels under meteorological conditions favorable to propagation from sources of known sound emission. The calculation of sound propagation from source to receiver locations consists of 1/1 octave band algorithms that incorporate the following physical effects:

- Geometric spreading wave divergence
- Reflection from surfaces
- Atmospheric absorption at 10^{o}C and 70 percent relative humidity
- Screening by topography and obstacles
- Terrain complexity and ground effects
- Sound power at multiple frequencies
- Source directivity factors
- Multiple noise sources and source type (point, area, and/or line)
- Height of both sources and receptors
- Averaging predicted sound levels over a given time period
- Site specific long term meteorological conditions

All plant components including 11 engines were assumed to be operating concurrently for 100 percent of the time. The complex interaction of the noise walls, enclosures, and plant equipment were modeled as solid structures. The ground attenuation selected was semi-reflective for offsite areas, and hard reflective for all onsite paved areas. Topographical information was imported into the acoustic model using the official USGS digital elevation dataset to accurately represent terrain in three dimensions and incorporating grading changes. A three-dimensional rendering of the facility was created directly from the preliminary site plan drawing by defining the height and extent of all significant noise sources. Sound power levels were assigned each source in a manner that best represents their expected acoustic performance inclusive of an engineering safety factor. For example, building walls are defined as vertical area sources and smaller sources such as pumps are defined by individual point sources. Figure 4.3-3 show the three dimensional CadnaA rendering of the facility, structures, and major noise components.

Results from acoustic modeling are projected in 5 dBA increments on scaled USGS orthophotos maps. The sound contour isopleths are plotted at a height of 1.52 meters above ground level (AGL), which is approximately the ear height of a standing person. The isopleths are presented in Figure 4.3-4 for the baseline plant and Figure 4.3-5 for the sound attenuated facility. Sound levels were also calculated at discrete receptor locations at a height of 4 meters AGL, the approximate height of a second story window.

The acoustic modeling was done for both a “baseline” plant and an “attenuated” plant. The “baseline” plant incorporates no special noise control measures, and includes such features as a steel wall building with no special acoustic treatment, and no enhanced stack (exhaust) silencing or silencing of the air inlets. The “attenuated” plant incorporates all the noise mitigation measures as described in Section 4.3.3. Baseline model results indicate that noise-attenuated design is necessary to satisfy the plant design levels. Table 4.3-9 summarizes the model results for both the baseline and attenuated conditions at the nearest receptors.

Table 4.3-9 Baseline and Silenced Plant Noise Levels at the Receptors during Base Load Operation

Receptor	Design Level, dBA	Baseline Plant, dBA	Attenuated Plant, dBA
ST-1	40	65	33
ST-2	40	69	37
ST-3	40	48	18
ST-4	39	62	30
ST-5	50	76	43
LT-1	50	67	34

Notes:
ST-5 and LT-1 design levels are for daytime periods when land use at these locations would be considered noise sensitive.

With appropriate mitigation measures (described below in Section 4.3-4) applied, the cumulative noise level will not cause the background level to be increased by more than 5 dBA at any receptor. Table 4.3-10 shows the cumulative increase in ambient sound level that is expected to occur at each location based on the attenuated plant design.

Table 4.3-10 Cumulative Environmental Noise Levels during Base Load Operation

Receptor	Background Level, dBA	Attenuated Plant, dBA	Cumulative Level, dBA	Cumulative Increase, dBA
ST-1	44	33	44	0
ST-2	45	37	46	1
ST-3	38	18	38	0
ST-4	34	30	35	1
ST-5	51	43	52	1
LT-1	45	34	45	0

Notes:
ST-5 and LT-1 background levels report for daytime periods. All other receptor locations, the lowest measured L_{90} sound level was used for the purposes of determining cumulative effects.

Since the cumulative increase in noise level at all locations will be less than 5 dBA and plant noise will not exceed an absolute limit of 40 dBA nighttime/50 dBA daytime at any single family residential receptor location, no adverse impact is expected due to the normal operation of the facility.

Vibration from an operating power plant could be transmitted through two primary means: ground (ground-borne vibration) and air (airborne vibration). The operating components of the plant would consist of engines and various pumps and fans. All of these pieces of equipment are balanced and monitored for by sensors and are programmed to automatically shut off when operating outside of tolerances. Low frequency noise can be transmitted through the air resulting in perceptible vibration. However, the power generation components have been adequately designed to not produce excessive levels of low frequency noise.

4.3.4 Cumulative Impacts

The purpose of this section is to identify past, present, and reasonably foreseeable actions in the Project area that could affect the same resources as those of the Project and provide the following analysis:

- Determine if the impacts of the Project and the other actions would overlap in time or geographic extent.
- Determine if the impacts of the Project would interact with, or intensify, the impacts of the other actions.
- Identify any potentially significant cumulative impacts.

Projects that have been identified in the assessment of cumulative effects include (1) the Sycamore Landfill, which is currently undergoing an expansion; (2) three separate residential developments including the Castlerock Development Project; (3) base housing at Miramar; (4) a multi-use staging area at the park south of State Route 52; (5) a road improvement project in the City of Santee; and (6) the City of Santee General Plan Amendment. Due to their proximity, the two projects that would likely have interactive effects with the Project would be the Sycamore Landfill and the Castlerock Development Project.

The proposed Project would be located directly south of the Sycamore Landfill with some of its facilities located on landfill property including the gen tie and utility switchyard. Working face operation at a landfill generally includes two activities that operate in sequence: refuse dumping and spreading and refuse spreading and compacting. Based on a refuse acceptance rate of 3,300 tons per day (TPD), the average noise level of these activities at 50 feet is similar to typical construction noise levels at 50 feet. However, the Sycamore Landfill is currently operational; therefore, background sound levels collected at the nearest receptors analyzed in this report are inclusive of the existing contribution from this facility. The landfill is planning to undergo a 47.2 million ton expansion that is expected to provide capacity until the year 2029 but received sound levels would likely remain similar to those measured assuming similar progression of the working face and minimal change to separation distance between the landfill and nearby receptors.

The Castlerock Development Project would be located within the Elliott Community Plan area bounded on the west by open space which is currently the Sycamore Landfill and on the east by residential development within the City of Santee. The proposed location of this development actually places future potentially noise sensitive receptors closer to the proposed Project. To the existing residents of the City of Santee evaluated in this report, cumulative noise impacts would be related to project construction as well as noise due to a rise in traffic and a general increase in urbanization to the area. Construction would create the greatest short-term negative noise increases at existing residents. The future residents of the Castlerock development, who would be located closer to the Project, would likely experience received sound levels between 35 and 40 dBA based on the Project acoustic modeling analysis results for the noise-attenuated design. Adverse noise impacts at future residents of the development are expected to be minimal; however, further acoustic modeling analysis should be considered once the design of the development (with specific sites where residences are planned) is finalized.

4.3.5 Mitigation Measures

As with any large, complex project, the information available during the initial engineering phases is only at a conceptual level and does not allow design details to be finalized for specific mitigation measures. Vendor information has been incorporated into the Project's acoustical model when available. Final design will incorporate appropriate mitigation measures to ensure compliance with all applicable regulatory requirements. These measures may include acoustical enclosures, barriers, silencers, and lagging, in addition to procuring low noise equipment. By including performance standards, these mitigation measures can ensure that Project noise impacts will be less than significant.

Although the current project design is only at a conceptual level, a preliminary analysis has been undertaken to determine typical noise limit requirements for most of the major noise producing components of the Project. In order to achieve an acceptable environmental noise impact, noise control will need to form an integral part of the Project design. Of importance in this regard is the delegation of the responsibility of achieving noise limit targets on individual plant items through contractual arrangements with the individual equipment suppliers, and then verification that these target limits can be achieved. It is easier to develop and incorporate noise control measures as part of the original design rather than try and retrofit them after the plant has been built and is operational. Therefore, the best method of achieving the level required for each element and its physical details will be developed in parallel with the overall detailed design of the facility.

Prior to defining individual equipment limits, an overall cumulative contribution for the Project must be determined in order to meet the relevant planning conditions. Normal operating conditions require the cumulative noise levels from the Project at the closest sensitive receiver to be less than 5 dBA. The requirements also set absolute limits dependent on receiving land use class. Tonal sound consists of prominent or identifiable tones, which are commonly sources of community disturbance. The frequency spectrum produced by typical power generation equipment is broadband in nature. Special attention will be given to sources that may generate tonal sound, including potentially problematic low frequency, which can be present in engine exhaust frequency spectra, to ensure that any prominent tones are sufficiently attenuated.

This acoustic feasibility analysis presents a conservative estimate of sound levels that would result during normal facility operation. In the baseline version of the model, A-weighted sound power levels represent the standard performance of each of these components identified as and assigned reference sound power (L_W) values, based either on field measurements of similar equipment made at existing plants, or on conservative calculations based on engineering guidelines using design data. As part of an iterative approach, candidate noise mitigation measures were identified. The Project is expected to comply with LORS if the mitigation measures discussed in the following sections is included in the design.

4.3.5.1 Occupational Noise Exposure Mitigation

In addition to far-field noise limits, nearly all components will also be specified with near-field maximum noise levels of 90 dBA at 3 feet (or 85 dBA at 3 feet where available as a vendor standard). The Cal/OSHA noise exposure level set to protect hearing of workers is 90 dBA as measured over an 8-hour work shift. Warning signs will be posted in high noise areas and a hearing protection program will be implemented for work areas where noise levels exceed 85 dBA. A hearing conservation program will be implemented as necessary, as per the California Occupational Health and Safety Administration (Cal/OSHA) requirements. The Project's commitment to ongoing compliance with Cal/OSHA regulations ensures that personnel are adequately protected from on-site noise hazards and extended noise exposure; therefore, the potential for adverse impact for occupational noise exposure is expected to be less than significant.

4.3.5.2 Project Noise Complaint Resolution Procedure

The Project will create a noise complaint resolution procedure to provide an efficient and effective means of receiving and resolving all noise complaints. Noise complaints received by the facility switchboard operator will be entered in a "Noise Complaint Logbook" kept at the switchboard desk. The caller will then be transferred to the plant manager or shift supervisor to explain the reason for the call. The manager or supervisor will briefly explain the resolution procedure to the caller and provide assurance that the problem will be investigated in a timely manner and corrected to the fullest extent practicable. Access to the noise complaint logbook will be available to the CEC for inspection, upon request. Figure 4.9-6 presents an example Noise Complaint Resolution Form.

4.3.5.3 Environmental Noise Survey

Once the facility becomes operational an environmental noise survey will be conducted to evaluate plant performance at the receptors. If the overall plant noise levels are found to exceed the design goals at any location, diagnostic measurements will be made to identify the cause or causes of the problem and to develop corrective measures. Traffic noise generated during operation will be of short duration and is not expected to result in adverse noise impacts.

4.3.5.4 Construction Time Restrictions

Operation of heavy equipment and other noisy construction work relating to any aspect of the Project shall be restricted to the time period between 7:00am and 7:00pm on every day of the week.

4.3.6 Laws, Ordinances, Regulations, and Standards

The LORS that apply to noise generated by the Project are summarized in Table 4.3-11.

Table 4.3-11 Applicable LORS for Noise

LORS	Purpose
Federal Offsite	
USEPA	Guidelines for state and local governments.
Federal Onsite	
OSHA	Exposure of workers over 8-hour shift limited to 90 dBA.
State Onsite	
Cal-OSHA, 8 CCR Article 105 Sections 095 et seq.	Exposure of workers over 8-hour shift limited to 90 dBA.
State Offsite	
CEC	Siting guidelines to evaluate the significance of noise impacts.
California Vehicle Code Sections 23130 and 23130.5	Regulates vehicle noise limits on California highways.
Local	
California Government Code Section 65302	Requires local government to prepare plans that contain noise provisions.
San Diego Municipal Noise Abatement and Control Ordinance	Establishes sound level limits based on land use type.
City of Santee Municipal Noise Abatement and Control Ordinance	Establishes sound level limits based on zoning.

4.3.6.1 Federal

USEPA

There are no noise-related federal LORS that affect the Project, nor has the USEPA promulgated standards for regulations for environmental noise generated by plants. The USEPA has issued relevant guidance, however. In 1974, the USEPA published Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety (USEPA 1974). This report represents the only published study that includes a large database of community reaction to noise to which a proposed project can be readily compared. This publication evaluates the effects of environmental noise with respect to health and safety, and provides information for state and local governments to use in developing their own ambient noise standards.

For outdoor residential areas and other locations in which “quiet” is a basis for use, the recommended USEPA guideline is an L_{dn} of 55 dBA. Provided that Project operations meet this criterion, USEPA concludes that adjacent Noise Sensitive Areas (NSAs) would regard the noise levels as generally acceptable. The USEPA also suggests an L_{eq} of 70 dBA (24-hour) limit to avoid adverse effects on public health and safety at publicly accessible property lines or extents of work areas where extended public exposure is possible. The USEPA criteria are summarized in Table 4.3-12, which identifies levels of environmental noise below which there is no evidence that the general population would be at risk to USEPA identified health effects. Because local LORS apply to this Project, these guidelines are not applicable.

Table 4.3-12 Summary of USEPA Noise Levels

Location	Level	Effect
All public accessible areas with prolonged exposure	70 dBA $L_{eq\ (24h)}$	Safety/hearing loss concerns
Outdoor at residential structure and other NSAs where a large amount of time is spent	55 dBA L_{dn}	Protection against annoyance and activity interference
Outdoor areas where limited amounts of time are spent, i.e., park areas, school yards, golf courses, etc.	55 dBA $L_{eq\ (24h)}$	
Indoor residential areas	45 dBA L_{dn}	
Indoor non-residential areas	45 dBA $L_{eq\ (24h)}$	

OSHA

The Federal Government has long recognized the potential hazards caused by noise on industrial and construction projects. The OSHA current noise standard for the construction industry stems from the occupational noise standard originally published in 1969 by the Bureau of Labor Standards under the authority of the Construction Safety Act (40 U.S.C. 333). OSHA adopted the construction noise standard in 1971 (36 FR 7340, 4/27/ 71) and later recodified it as 29 CFR 1926.52. Another section of the construction standard (29 CFR 1926.101) contains a provision requiring employers to provide hearing protection devices when needed. Both sections 1926.52 and 1926.101 apply to employers engaged in construction where high noise levels are possible.

Paragraph (a) of section 1926.52 requires protection against the effects of noise exposure when 8-hour time-weighted average sound levels exceed a permissible exposure limit (PEL) of 90 dBA, measured on the A-scale of a sound level meter set at slow response. The exposure level is raised 5 dB for every halving of exposure duration as shown in Table 4.3-13.

Table 4.3-13 OSHA Permissible Daily Noise Exposure Limits

Duration of Exposure Per Day (Hours)	Sound Level (dBA)
8	90
6	92
4	95
3	97
2	100
1 ½	102
1	105
½	110
¼ or less	115

Furthermore, exposure to impulsive or impact noise should not exceed a 140 dB peak sound pressure level. Paragraph 29 CFR 1926.52(b) states that when employees are subjected to noise doses exceeding those shown in Table 4.3-11, feasible administrative or engineering controls will be identified and implemented to lower employee noise exposure. If controls fail to reduce sound to the PEL, personal protective equipment must be provided and used to reduce noise exposure. In compliance with OSHA, Project contractors will be required to readily provide construction workers with OSHA approved hearing protection devices (HPD) and to identify high noise areas and activities where hearing protection will be required.

4.3.6.2 State of California

Cal-OSHA

The California Department of Industrial Relations, Division of Occupational Safety and Health enforces Cal-OSHA regulations, which are the same as the federal OSHA regulations described previously. The regulations are contained in Title 8 of the CCR, General Industrial Safety Orders, Article 105, Control of Noise Exposure, Sections 5095, et seq.

CEC

The State of California regulates noise emissions through the jurisdiction of state commissions. Regulation of noise emissions and noise exposure from power plants is provided via the CEC. The CEC provides siting guidelines (CEC-140-2007-003) to assist power plant operators with the evaluation of potential power plant locations. The siting guidelines specify the that potential noise impacts from power plant construction and operation be evaluated through the comparison of existing ambient noise levels with the noise levels projected to result from the project. This approach requires the determination of noise emissions from the project and evaluation of noise exposure at specific receptor locations. In essence, this methodology ensures that power plants in California are sited with regard to the local noise environment. In general, the CEC considers that a project-related increase in environmental noise of 5 to 10 dBA or more at noise-sensitive receptors may be significant. An increase of 10 dBA or more is generally considered a significant impact.

CEQA

CEQA requires that significant environmental impacts be identified and that such impacts be eliminated or mitigated to the extent feasible. As explained above, the CEQA guidelines (CCR, Title 14, Appendix G, Section XI) set forth characteristics that may signal a potentially significant impact:

- Exposure of people to noise levels in excess of standards established in the local General Plan or noise ordinance;
- Exposure of people to excessive ground-borne noise levels or vibration;
- Substantial permanent increase in ambient noise levels in the project vicinity; or
- Substantial temporary or periodic increase in ambient noise levels in the project vicinity.

Noise due to construction activities is usually considered insignificant for CEQA purposes if:

- Construction activity is temporary.
- Use of heavy equipment and noisy activities is limited to daytime hours.
- All industry-standard noise abatement measures are implemented for noise-producing equipment.

California Vehicle Code

Noise limits for highway vehicles are regulated under the California Vehicle Code, Sections 23130 and 23130.5. The limits are enforceable on the highways by the California Highway Patrol and the County Sheriff Offices.

4.3.6.3 Local

The State of California provides regulation by adopted laws and guidance regarding noise emissions through the jurisdiction of state commissions requiring local jurisdictions (California Government Code Section 65302[f]) to prepare general plans, which include Noise Elements. The purpose of the noise element is to identify goals, policies, and implementation measures that can be used to guide future land use development with regard to noise.

The State of California identifies the following land uses as noise sensitive: residential areas, schools, convalescent and acute care hospitals, parks and recreational areas, and churches. The recommended noise guideline for exterior living areas (yards and patios) for new residential land uses is a 55 dBA CNEL, and must not exceed 65 dBA CNEL. In addition, for multi-family residential projects, the California Noise Insulation Standard (California Administrative Code, Title 25, Chapter 1, Subchapter 1, Article 4) requires that the indoor noise levels in multi-family residential developments do not exceed a CNEL of 45 dBA to be consistent with State of California standards.

City of San Diego

The City of San Diego regulates noise through Chapter 5, Article 9.5 of the Municipal Code, which governs noise abatement and control and provides sound level limits based on land use. Under Section 59.5.0401 of the San Diego Municipal Code, the following exterior noise standards are given in Table 4.3-14.

Table 4.3-14 City of San Diego Sound Limits

Land Use	Time of Day	One-Hour Average Sound Level (Decibels)
Single Family Residential	7 a.m. to 7 p.m.	50
	7 p.m. to 10 p.m.	45
	10 p.m. to 7 a.m.	40
Multi-Family Residential (up to a maximum density 1/2000)	7 a.m. to 7 p.m.	55
	7 p.m. to 10 p.m.	50
	10 p.m. to 7 a.m.	45
All other residential	7 a.m. to 7 p.m.	60
	7 p.m. to 10 p.m.	55
	10 p.m. to 7 a.m.	50
Commercial	7 a.m. to 7 p.m.	65
	7 p.m. to 10 p.m.	60
	10 p.m. to 7 a.m.	60
Industrial or Agricultural	Any time	75

The City of San Diego Municipal Code (59.5.0404) prohibits construction activities that cause excessive or disturbing noise between the hours of 7:00 p.m. and 7:00 a.m. unless a permit has been applied for and granted beforehand by the San Diego Noise Abatement and Control Administrator. In addition, San Diego does not allow a construction activity to cause an average sound level greater than 75 dBA during the hours of 7:00 a.m. to 7:00 p.m. at or beyond the property lines of any property zoned residential. Construction noise is categorically exempted from noise regulations provided that is limited to weekdays during daytime hours of 7:00 a.m. to 7:00 p.m.

City of Santee

The City's noise ordinance establishes sound level limits for various land uses (City of Santee 2001). The noise ordinance limits are in terms of a 1-hour average sound level. The allowable noise limits vary based upon the City's zoning district and time of day. Unless a variance has been applied for and granted, it is unlawful for any person to cause or allow the creation of any noise to the extent that the 1-hour average sound level, at any point on or beyond the boundaries of the property on which the sound is produced, exceeds the applicable limits provided in Table 4.3-15.

Table 4.3-15 City of Santee Sound Limits

Zone	Time of Day	Applicable Limit One-Hour Average Sound Level (Decibels)
A-70, A-72, R-S, R-V, R-R, R-MH, S-87, S-88, S-90	7 a.m. to 7 p.m.	50
	7 p.m. to 10 p.m.	45
	10 p.m. to 7 a.m.	40
R-U, R-C, and C-31	7 a.m. to 7 p.m.	55
	7 p.m. to 10 p.m.	50
	10 p.m. to 7 a.m.	45
All other commercial zones	7 a.m. to 7 p.m.	60
	7 p.m. to 10 p.m.	55
	10 p.m. to 7 a.m.	50
M-50, M-52	Anytime	70
All other industrial zones	Anytime	75
The sound level at the location on a boundary between an industrial zone and a residential zone	7 a.m. to 7 p.m.	60
	7 p.m. to 10 p.m.	55
	10 p.m. to 7 a.m.	50

Note:

For all other zones the sound level limit on a boundary between two zoning districts is the arithmetic mean of the respective limits for the two districts; provided, however, that the noise level limit applicable to extractive industries, including but not limited to borrow pits and mines, shall be the noise level limit applicable to the M-52 zone, or other standard as required for industrial uses adjacent to a residential zone.

Fixed-location public utility distribution or transmission facilities located on or adjacent to a property line shall be subject to the noise level limits of this section, measured at or beyond six feet from the boundary of the easement upon which the equipment is located.

If the measured ambient noise level exceeds the applicable limit noted above, the allowable 1-hour average noise level shall be the ambient noise level.

The City of Santee restricts the operation of any construction equipment except between the hours of 7:00 a.m. through 7:00 p.m., Monday through Saturday, excluding legal holidays. Also, construction equipment must not cause noise at a level in excess of 75 dB for more than 8 hours during any 24-hour period when measured at or within the property lines of any property which is developed and used either in part or in whole for residential purposes. Higher noise limits apply for shorter time intervals.

Vibration

Ground-borne vibrations can be a source of annoyance to people or a source of structural damage to some types of buildings. Although vibration measurements can be presented in many different forms, peak particle velocity (PPV) is the unit of measure used most often to assess building damage potential. The California Department of Transportation (Caltrans) has identified vibration impact criteria for both building damage potential and human annoyance (Caltrans 2002, 2004). Both human annoyance effects and building damage effects depend in part on whether vibration events are isolated, discrete events or a relatively continuous episode of vibrations. In general, there is less sensitivity to single, discrete events than to continuous events or frequently repeated discrete events. Table 4.3-16 summarizes Caltrans criteria for assessing the effects of ground-borne vibration.

Table 4.3-16 Summary of Caltrans Vibration Criteria

Type of Criteria	Threshold Condition	Peak Particle Velocity, inches/second Transient Sources	Peak Particle Velocity, inches/second Continuous or Frequent Sources
Human Response	Barely perceptible	0.04	0.01
Human Response	Distinctly perceptible	0.25	0.04
Human Response	Strongly perceptible; may be annoying to some people in buildings	0.9	0.10
Human Response	Severe; unpleasant for people in buildings; unacceptable to pedestrians on bridges	2.0	0.4
Building Damage	Cosmetic damage threshold for extremely fragile historic buildings, ruins, and ancient monuments	0.12	0.08
Building Damage	Cosmetic damage threshold for fragile buildings	0.2	0.1
Building Damage	Cosmetic damage threshold for historic and some old buildings	0.5	0.25
Building Damage	Cosmetic damage threshold for older residential structures	0.5	0.3
Building Damage	Cosmetic damage threshold for newer residential structures	1.0	0.5
Building Damage	Cosmetic damage threshold for modern industrial/ commercial buildings	2.0	0.5

4.3.7 Agencies and Agency Contacts

Agency contacts relative to noise issues are presented in Table 4.3-17.

Table 4.3-17 Agencies and Agency Contacts for Noise

Applicable Agency	Name	Title	Phone	Email	Mailing Address
California Energy Commission	Shahab Khoshmashrab	Senior Enigineer	(916) 654-3913	Skhoshma @energy.state.ca.us	1516 Ninth Street Sacramento, CA 95814
City of San Diego	Morris Dye	Development Project Manager	(619) 236-7258	Mdye @sandiego.gov	1222 First Avenue, MS 301 San Diego, CA 92101-4154

4.3.8 Permits Required and Permit Schedule

No permits specific to noise are required or prescribed permit schedule.

4.3.9 References

American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE), 1989 ASHRAE Handbook—Fundamentals, Atlanta, Georgia, 1989.

Bies D. and Hansen C. 2003. “Engineering Noise Control: Theory and Practice”, Published by Taylor & Francis, 2003.

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Kurze, U. and L. Beranek. 1988. Noise and Vibration Control. Institute of Noise Control Engineering, Washington, DC.

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___________________. 1971a. Community Noise. NTID300.3 (N-96-01 IIA-231). Prepared by Wylie Laboratories.

___________________. 1974. Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety. 550/9-74-004, Office of Noise Abatement and Control, Washington, DC.

FIGURES

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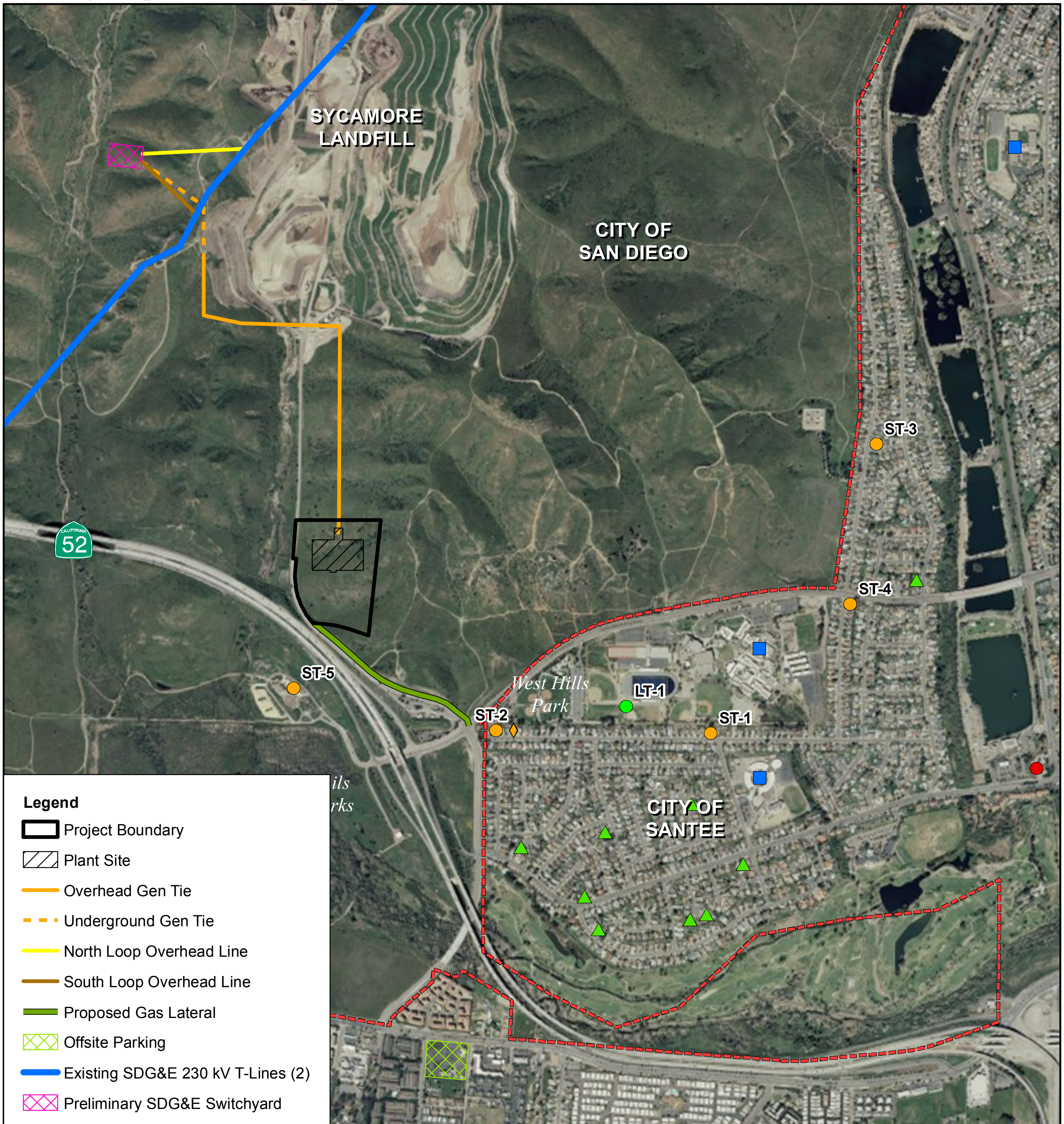


Legend

- Project Boundary
- Plant Site
- Overhead Gen Tie
- Underground Gen Tie
- North Loop Overhead Line
- South Loop Overhead Line
- Proposed Gas Lateral
- Offsite Parking
- Existing SDG&E 230 kV T-Lines (2)
- Preliminary SDG&E Switchyard

Legend

Noise Measurement Locations

- Long-Term Measurement Location
- Short-Term Measurement Locations

Sensitive Receptors

- School
- Day Care Facilities
- Emergency Response
- Long-Term Health Care

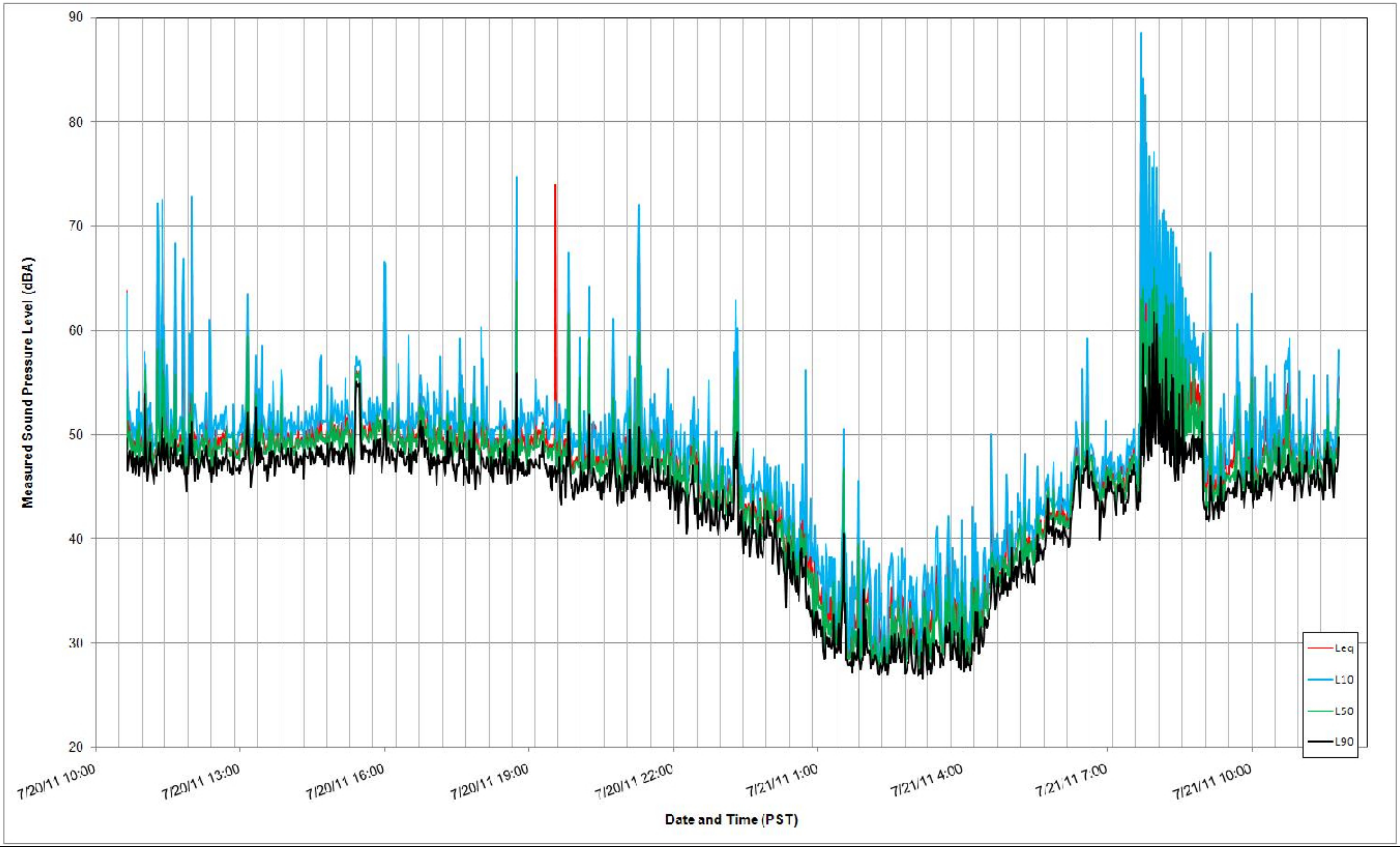
Cogentrix

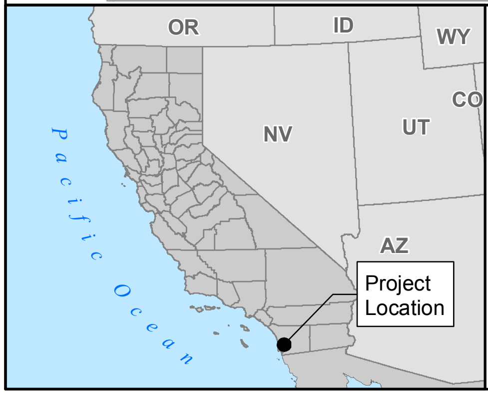
QUAIL BRUSH GENERATION PROJECT

FIGURE 4.3-1 NOISE MEASUREMENT LOCATIONS

0 750 1,500 3,000
Feet

TETRA TECH EC, INC.



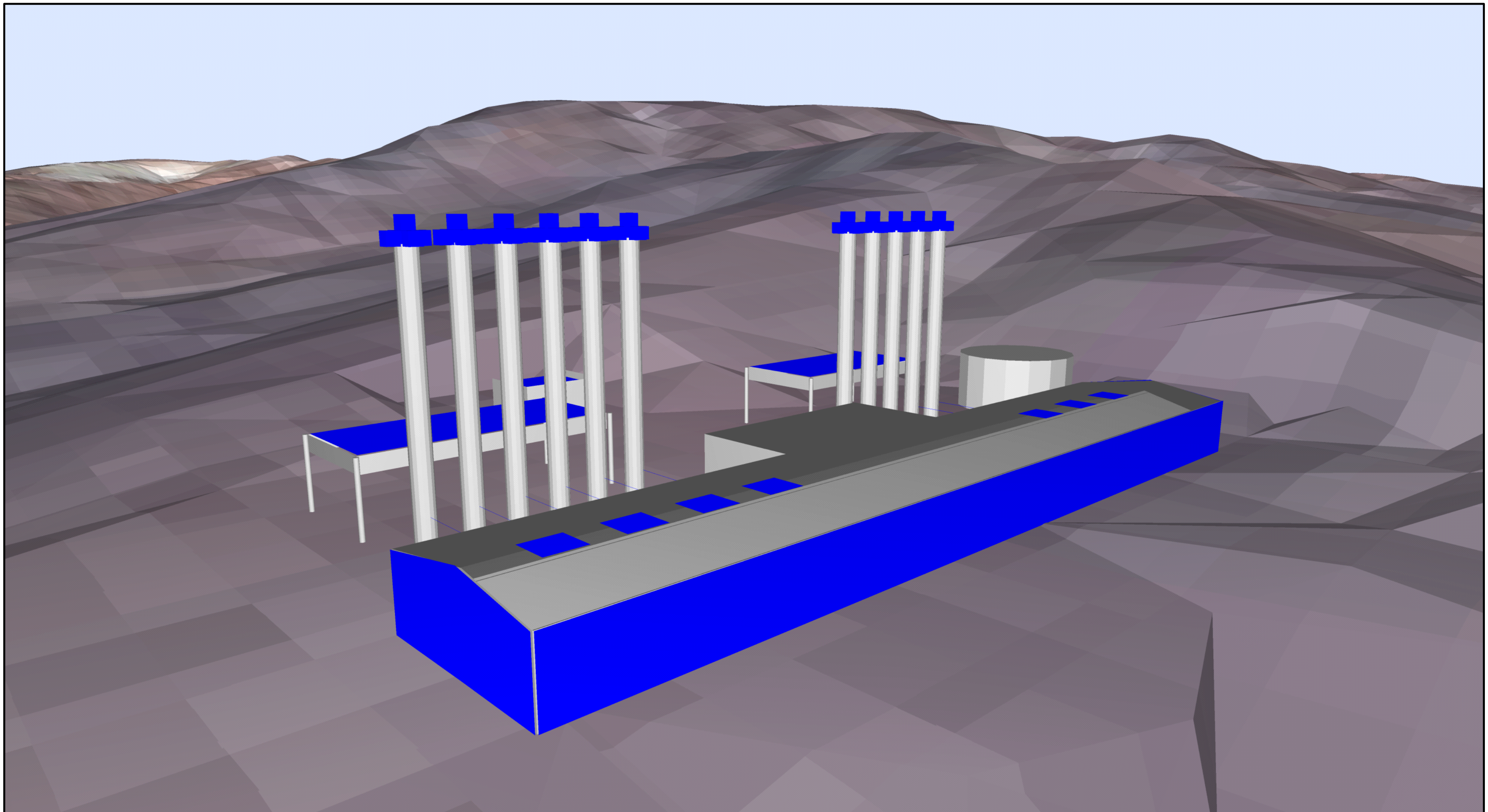


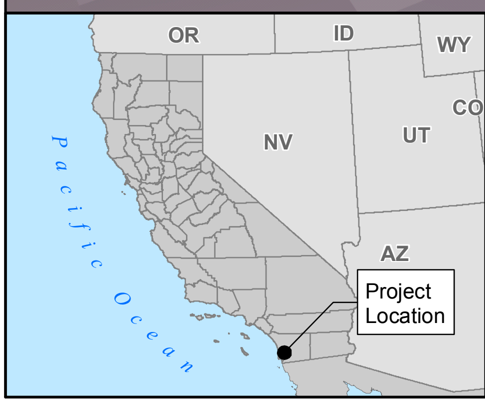
Cogentrix

QUAIL BRUSH GENERATION PROJECT

FIGURE 4.3-2
TIME HISTORY SOUND PRESSURE LEVELS

TETRA TECH EC, INC.





QUAIL BRUSH GENERATION PROJECT

FIGURE 4.3-3
GENERATION PLANT
CADNAA RENDERING

Cogentrix

TETRA TECH EC, INC.

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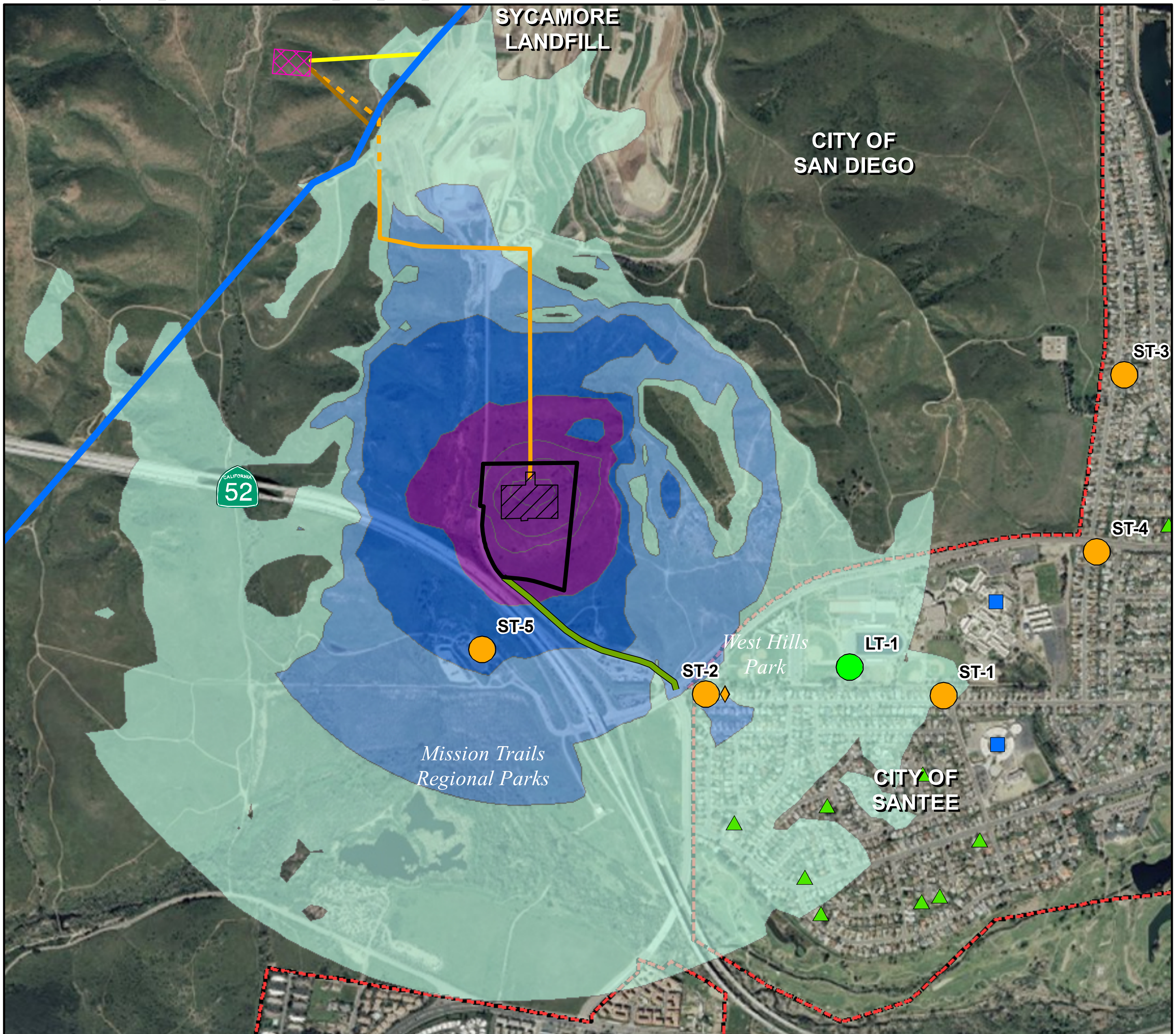

Legend

- Project Boundary
- Plant Site
- Offsite Parking
- Proposed Gas Lateral
- Preliminary SDG&E Switchyard
- Overhead Gen Tie
- Underground Gen Tie
- North Loop Overhead Line
- South Loop Overhead Line
- Existing SDG&E 230 kV T-Lines (2)

Noise Measurement Locations

- Long-Term Measurement Location
- Short-Term Measurement Locations

Sensitive Receptors

- School
- Day Care Facilities
- Emergency Response
- Long-Term Health Care

Legend

Sound Levels (dBA)

- 65-70 dBA
- 70-75 dBA
- 75-80 dBA
- >80 dBA

Cogentrix

QUAIL BRUSH GENERATION PROJECT

FIGURE 4.3-4
RECEIVED SOUND LEVELS:
BASELINE PROJECT OPERATION

0 750 1,500 3,000
Feet

TETRA TECH EC, INC.

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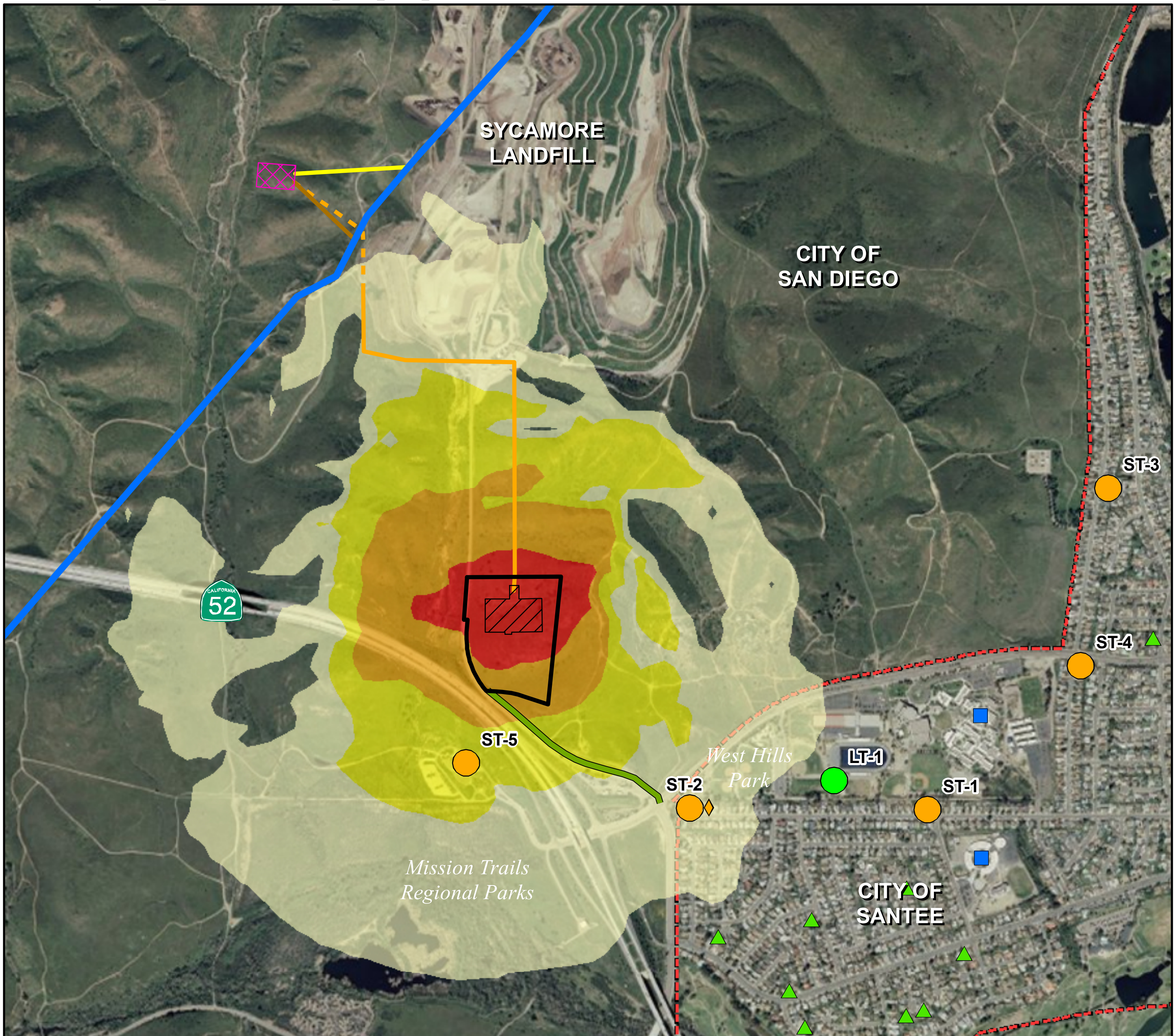


Legend

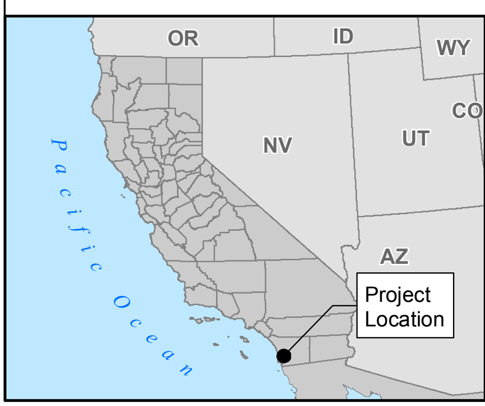
- Project Boundary
- Plant Site
- Offsite Parking
- Proposed Gas Lateral
- Preliminary SDG&E Switchyard
- Overhead Gen Tie
- Underground Gen Tie
- North Loop Overhead Line
- South Loop Overhead Line
- Existing SDG&E 230 kV T-Lines (2)

Noise Measurement Locations

- Long-Term Measurement Location
- Short-Term Measurement Locations

Sensitive Receptors

- School
- Day Care Facilities
- Emergency Response
- Long-Term Health Care



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Sound Levels (dBA)

- 35-40 dBA
- 40-45 dBA
- 45-50 dBA
- >50 dBA

Cogentrix

QUAIL BRUSH GENERATION PROJECT

FIGURE 4.3-5
RECEIVED SOUND LEVELS:
ATTENUATED PROJECT OPERATION

0 750 1,500 3,000

Feet

TETRA TECH EC, INC.

NOISE COMPLAINT RESOLUTION FORM

Complainant's name and address:

Date complaint received:

Time complaint received:

Nature of noise complaint:

Definition of problem after investigation by plant personnel:

Initial noise levels at reference distance (or 3 feet): ___________ dBA

Initial noise levels at the complainant's property: ___________ dBA

Final noise levels at reference distance (or 3 feet): ___________ dBA

Final noise levels at the complainant's property: ___________ dBA

Description of corrective measures taken:

Approximate installed cost of corrective measures:

Date installation completed:

Date first letter sent to complainant: (copy attached)

Date final letter sent to complainant: (copy attached)

This information is certified to be correct:

Plant Manager's Signature

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QUAIL BRUSH GENERATION PROJECT

FIGURE 4.3-6
NOISE COMPLAINT RESOLUTION FORM

TETRA TECH EC, INC.

DATA ADEQUACY WORKSHEETS

Adequacy Issue: Adequate ____ Inadequate ____

DATA ADEQUACY WORKSHEET

Revision No. 0 Date ____

Technical Area: **Noise** Project: ____ Technical Staff: ____

Project Manager: Eric Solorio Docket: ____ Technical Senior: ____

SITING REGULATIONS	INFORMATION	AFC PAGE NUMBER AND SECTION NUMBER	ADEQUATE YES OR NO	INFORMATION REQUIRED TO MAKE AFC CONFORM WITH REGULATIONS
Appendix B (g) (1)	...provide a discussion of the existing site conditions, the expected direct, indirect and cumulative impacts due to the construction, operation and maintenance of the project, the measures proposed to mitigate adverse environmental impacts of the project, the effectiveness of the proposed measures, and any monitoring plans proposed to verify the effectiveness of the mitigation.	4.3.2, 4.3.3, 4.3.4		
Appendix B (g) (4) (A)	A land use map which identifies residences, hospitals, libraries, schools, places of worship, or other facilities where quiet is an important attribute of the environment within the area impacted by the proposed project. The area potentially impacted by the proposed project is that area where, during either construction or operation, there is a potential increase of 5 dB(A) or more, over existing background levels.	Figure 4.3-1		

Adequacy Issue: Adequate ____ Inadequate ____ **DATA ADEQUACY WORKSHEET** Revision No. 0 Date ____

Technical Area: **Noise** Project: ____ Technical Staff: ____

Project Manager: Eric Solorio Docket: ____ Technical Senior: ____

Siting Regulations	Information	AFC Page Number and Section Number	Adequate Yes or No	Information Required to Make AFC Conform with Regulations
Appendix B (g) (4) (B)	A description of the ambient noise levels at those sites identified under subsection (g)(4)(A) which the applicant believes provide a representative characterization of the ambient noise levels in the project vicinity, and a discussion of the general atmospheric conditions, including temperature, humidity, and the presence of wind and rain at the time of the measurements. The existing noise levels shall be determined by taking noise measurements for a minimum of 25 consecutive hours at a minimum of one site. Other sites may be monitored for a lesser duration at the applicant's discretion, preferably during the same 25-hour period. The results of the noise level measurements shall be reported as hourly averages in Leq (equivalent sound or noise level), Ldn (day-night sound or noise level) or CNEL (Community Noise Equivalent Level) in units of dB(A). The L10, L50, and L90 values (noise levels exceeded 10 percent, 50 percent, and 90 percent of the time, respectively) shall also be reported in units of dB(A).	4.3.2.1, 4.3.2.2		
Appendix B (g) (4) (C)	A description of the major noise sources of the project, including the range of noise levels and the tonal and frequency characteristics of the noise emitted.	4.3.2.2		
Appendix B (g) (4) (D)	An estimate of the project noise levels, during both construction and operation, at residences, hospitals, libraries, schools, places of worship or other facilities where quiet is an important attribute of the environment, within the area impacted by the proposed project.	4.3.3.2, 4.3.3.3		
Appendix B (g) (4) (E)	An estimate of the project noise levels within the project site boundary during both construction and operation and the impact to the workers at the site due to the estimated noise levels.	4.3.3.2, 4.3.3.3		

Adequacy Issue: Adequate ____ Inadequate ____ DATA ADEQUACY WORKSHEET Revision No. 0 Date ____
Technical Area: **Noise** Project: ____ Technical Staff: ____
Project Manager: Eric Solorio Docket: ____ Technical Senior: ____

Siting Regulations	Information	AFC Page Number And Section Number	Adequate Yes Or No	Information Required To Make AFC Conform With Regulations
Appendix B (g) (4) (F)	The audible noise from existing switchyards and overhead transmission lines that would be affected by the project and estimates of the future audible noise levels that would result from existing and proposed switchyards and transmission lines. Noise levels shall be calculated at the property boundary for switchyards and at the edge of the rights-of-way for transmission lines.	4.3.3.2, 4.3.3.3		
Appendix B (i) (1) (A)	Tables which identify laws, regulations, ordinances, standards, adopted local, regional, state, and federal land use plans, leases, and permits applicable to the proposed project, and a discussion of the applicability of, and conformance with each. The table or matrix shall explicitly reference pages in the application wherein conformance, with each law or standard during both construction and operation of the facility is discussed; and	4.3.5		
Appendix B (i) (1) (B)	Tables which identify each agency with jurisdiction to issue applicable permits, leases, and approvals or to enforce identified laws, regulations, standards, and adopted local, regional, state and federal land use plans, and agencies which would have permit approval or enforcement authority, but for the exclusive authority of the commission to certify sites and related facilities.	4.3.6		
Appendix B (i) (2)	The name, title, phone number, address (required), and email address (if known), of an official who was contacted within each agency, and also provide the name of the official who will serve as a contact person for Commission staff.	4.3.6		

Adequacy Issue: Adequate ____ Inadequate ____ DATA ADEQUACY WORKSHEET Revision No. 0 Date ____

Technical Area: **Noise** Project: ____ Technical Staff: ____

Project Manager: Eric Solorio Docket: ____ Technical Senior: ____

SITING REGULATIONS	INFORMATION	AFC PAGE NUMBER AND SECTION NUMBER	ADEQUATE YES OR NO	INFORMATION REQUIRED TO MAKE AFC CONFORM WITH REGULATIONS
Appendix B (i) (3)	A schedule indicating when permits outside the authority of the commission will be obtained and the steps the applicant has taken or plans to take to obtain such permits.	4.3.7		